Barcode Scanner

Magstripe

Decoder & Scanner

Programming Manual

CONTENTS

Getting Started

Installing Keyboard Wedge Scanner

To install a keyboard wedge barcode scanner, follow the steps listed below:

1) Make sure that the scanner has the correct Y (U)- cable for the system (a PC or terminal)
2) Turn off the power of the system
3) Unplug the keyboard from the system
4) Connect the Y (U)- cable to the system and keyboard
5) Turn on the power of the system
6) If the indicator LED lights up and the buzzer sounds, the scanner is ready for reading

Installing a RS-232 Interface Barcode Scanner

To install a RS-232 interface scanner, the host device should have a RS-232 port to receive data from the scanner, follow the steps listed below:

1) Make sure that the scanner has the right connector for the RS-232 port of the host device
2) Make sure that there is a power supply to the scanner (if necessary)
3) Connect the cable to the RS-232 port of the device
4) If the indicator LED lights up and the buzzer sounds, the scanner is ready for reading

Barcode Scanner Setup Procedures

1) Locate a group that contains the parameters to be changed.
2) Scan the "Enter Group #" label. The scanner will sound beeps indicate that setup is in progress
3) Scan the label representing the parameter to be changed
4) Scan the "Exit" to end the group currently selected, the scanner will sound beeps
5) Repeat the procedure for other groups including the parameters to be changed

Example 1:

Set the operating mode to "Continuous mode"

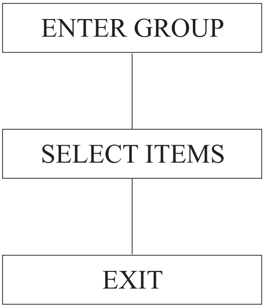
1) Scan "Enter Group 5"
2) Scan "Continuous/Trigger off"
3) Scan "Exit"

Example 2

Assign Preamble string as "#", and postamble string as "END"

1) Scan "Enter Group 6"
2) Scan Preamble
3) Scan "#" from "Full ASCII Table and Table-Hex."
4) Scan "Confirm" Label in Table-Hex
5) Scan "Postamble"
6) Scan "E", "N", "D" from "Full ASCII Table and Table Hex" consecutively
7) Scan "Confirm" Label in Table-Hex.
8) Scan Exit

Setup Flow Chart



Set All Defaults

Show Version

Note: (*) denotes default setting options marked by ( ) are only available upon request.

Group 0: Interface Selection

ENTER GROUP

EXIT

KEYBOARD

RS-232

(WAND)

(OCIA)

(DTMF)

Reserved 2

Resered 3

Reserved 4

Note: The interface is pre-set at factory according to the model of the device.

Group 1: Device Selection for Keyboard Interface

ENTER GROUP

EXIT

PC/AT, PS/2 50,60,70,80(*)

PC/XT

PS/2 25, 30

(NEC 9801)

(IBM 5550)

(PS 55)

(NEC N5520)

(ACER 7300)

(KW105D/
CT-700A/WANG 5120)

(WANG 5425)

(MAC_SE)

(LC-6533)

Note: Options marked by ( ) are only available upon request.

Group 1: Device Selection for Keyboard Interface

ENTER GROUP

EXIT

(IBM3196, 3197, 3476, 3477)

Reserved Q

Reserved R

Reserved T

IBM3197

IBM 3476

IBM3477

Reserved 5

Reserved 6

Reserved 7

Reserved 8

Reserved 9

Group 2: Intercharacter Delay

ENTER GROUP

EXIT

Start Keyboard Setting

Scan Enter Group 2 Label -- >
Scan Start Keyboard (or RS-232) Setting Label -->
Scan two digits labels in Table-Hex -->
Scan Exit Label

Start RS-232 Setting

Keyboard Default Value: 05
RS-232 Default Value : 00

Group 3: Language for Keyboard Interface

ENTER GROUP

EXIT

U.S. (*)

ENGLAND

FRANCE

GERMANY

ITALY

BELGIUM

SWEDEN/FINLAND

SPANISH

DENMARK

PORTUGAL

SWISS

NORWAY

Group 3: Language for Keyboard Interface

ENTER GROUP

EXIT

CANADA

HOLLAND

POLAND

LATIN

JAPAN

Reserved 1

Reserved 2

Reserved 3

(IBM THINK-PAD FOR JAPAN)

(PANASONIC CF-II FOR JAPAN)

Note: Options marked by ( ) are only available upon request.

Group 4: Terminator

ENTER GROUP

EXIT

KEYBOARD

NONE

CR

(*)

SPACE

TAB

ESC

CTRL-C

EXEC

Group 4: Terminator

ENTER GROUP

EXIT

RS-232

NONE

CR (*)

CR/LF

LF

SPACE

TAB

ESC

CTRL-C

STX..ETX

XON.. XOFF

EOT

Group 5: Scan Mode

ENTER GROUP

EXIT

1: Trigger On/Off

2: Trigger On/
Good Read Off (*)

3: Trigger On/
Good Read Off/
Delay Timeout = ?

4: Continuous/
Trigger Off

5: Continuous/
LED Always on

6: Continuous/
No Trigger

7: Continuous/
Testing

8: Continuous/
Trigger Off/
Delay Timeout = ?

Delay Timeout Setting:
Scan Enter Group 5 Label -->
Scan 3 or 8 Label -->
Scan two digit labels in Table-Hex -->
Scan Confirm Label in Table-Hex -->
Scan Exit Label

Note: Scan mode setting is only available for CCD/LASER type scanner.

Group 5: Scan Mode

ENTER GROUP

EXIT

FLASH OFF(*)

FLASH ON

Note: Scan mode setting is only available for CCD/Laser type scanner.

Group 6: Preamble and Postamble

ENTER GROUP

EXIT

Preamble

Postamble

Preamble & Postamble Setting:

Scan Enter Group 6 Label -->
Scan Preamble or Postamble Label -->
Refer to ASCII Table(page 46), scan two digits in Table-Hex (Page 45)
Representing one character, maximum 10 characters can be accepted. -->
Scan Confirm Label in Table-Hex (Page 45)
Scan Exit Label

Clear

Clear Preamble & Postamble :
Scan Enter Group 6 Label -->
Scan Preamble or Postamble Label -->
Scan Clear Label-->
Scan Exit Label

Group 7: RS-232 Parameters

ENTER GROUP

EXIT

Baud Rate

600

1200

2400

4800

9600(*)

19200

38400

Data Bit

BIT 7

BIT 8 (*)

Group 7: RS-232 Parameters

ENTER GROUP

EXIT

Parity :

NONE (*)

ODD

EVEN

Handshaking:

NONE (*)

XON/XOFF

Scanner Ready

Data Ready

ACK/NAK

Group 7: RS-232 Parameters

ENTER GROUP

EXIT

(ACK/NAK Response Time CTS Observation Time:)

100 ms

300 ms

500 ms

1 sec

3 sec (*)

5 sec

10 sec

00

Group 8: CODE 39 / CODE 32

ENTER GROUP

EXIT

Code 39

Disable

Enable (*)

Standard (*)

Full ASCII

Transmit Start/End Character

Disable (*)

Enable

Transmit Check Character

Disable

Enable (*)

Verify Checksum

Disable (*)

Enable

Group 8: CODE 39 / CODE 32

ENTER GROUP

EXIT

Enable CODE 32

Disable CODE 32 (*)

Verify Normal (*)

Verify Strick

Group 9-1: Interleaved 2 OF 5

ENTER GROUP

EXIT

Disable (*)

Enable

Transmit Check Character

Disable

Enable (*)

Verify Checksum

Disable (*)

Enable

Length Define
Min: 4
Max: 48

Barcode Length Setting:
Scan Enter Group 9-1 Label -->
Scan Length Define Label -->
Scan Four Digit Labels in Table Hex (Page 43) -->
Scan Confirm Label in Table-Hex -->
Scan Exit Label

User Define
3 Sets Available

User Define Length Setting:
Scan Enter Group 9-1 Label
Scan User Define Label-->
Scan Six Digit Labels in Table Hex
(Only 3 sets of length can be defined)
Scan Confirm Label in Table Hex -->
Scan Exit Label

Group 9-2: Industrial 2 OF 5 / IATA

ENTER GROUP

EXIT

Enable

Disable (*)

Transmit Check Character

Enable (*)

Disable

Transmit Check Character

Enable

Disable (*)

Barcode Length Setting:

Scan Enter Group 9-2 Label -->
Scan Length Define Label -->
Scan Four Digit Labels in Table Hex (Page 43) -->
Scan Confirm Label in Table-Hex -->
Scan Exit Label

Length Define
Min: 2
Max: 24

User Define Length Setting:

Scan Enter Group 9-2 Label
Scan User Define Label-->
Scan Six Digit Labels in Table Hex
(Only 3 sets of length can be defined)
Scan Confirm Label in Table Hex -->
Scan Exit Label

User Define
3 Sets Available

IATA

Enable

Disable (*)

Group 9-3: Matrix 2 OF 5

ENTER GROUP

EXIT

Enable

Disable (*)

Transmit Check Character

Enable (*)

Disable

Verify Checksum

Enable

Disable (*)

Length Define
Min: 2
Max: 40

Barcode Length Setting:
Scan Enter Group 9-3 Label -->
Scan Length Define Label -->
Scan Four Digit Labels in Table Hex (Page 43) -->
Scan Confirm Label in Table-Hex -->
Scan Exit Label

User Define
3 Sets Available

User Define Length Setting:
Scan Enter Group 9-3 Label
Scan User Define Label-->
Scan Six Digit Labels in Table Hex
(Only 3 sets of length can be defined)
Scan Confirm Label in Table Hex -->
Scan Exit Label

Group 9-4: CHINA POSTAGE

ENTER GROUP

EXIT

Enable

Disable (*)

Transmit Check Character

Enable (*)

Disable

Verify Checksum

Enable

Disable (*)

Length Define
Min: 2
Max: 40

Barcode Length Setting:
Scan Enter Group 9-4 Label -->
Scan Length Define Label -->
Scan Four Digit Labels in Table Hex (Page 43) -->
Scan Confirm Label in Table-Hex -->
Scan Exit Label

User Define
3 Sets Available

User Define Length Setting:
Scan Enter Group 9-4 Label
Scan User Define Label-->
Scan Six Digit Labels in Table Hex
(Only 3 sets of length can be defined)
Scan Confirm Label in Table Hex -->
Scan Exit Label

Group 10: Code 128

ENTER GROUP

EXIT

Disable

Enable (*)

Enable/Disable Checkdigit

Disable

Enable (*)
(not send checkdigit)

UCC/EAN/128

Disable (*)

Enable

Note: Options marked by ( ) are only available upon request

Group 11: CODE 11

ENTER GROUP

EXIT

Disable

Enable (*)

Number of Check Character

One

Two (*)

Transmit Check Character

Disable (*)

Enable

Enable/Disable Checkdigit

Disable

Enable (*)

Group 12: Code 93

ENTER GROUP

EXIT

Disable (*)

Enable

Verify Checkdigit

Disable

Enable (*)

Group 13: MSI-PLESSEY

ENTER GROUP

EXIT

Disable

Enable (*)

Verify Checkdigit

Disable

Enable (*)

Enable MOD

Enable MOD 10 (*)

Enable MOD 10-10

Enable MOD 11-10

Transmit/Truncate Checkdigit

Transmit checkdigit (*)

Truncate 1st checkdigit

Truncate 1st & 2nd checkdigit

Group 14: CODABAR / NW7

ENTER GROUP

EXIT

Enable (*)

Disable

Transmit Start/End Character

Disable (*)

Enable

Start/End Transmit Type

ABCD/TN*E

ABCD/ABCD

abcd/tn*e

abcd/abcd (*)

Group 15: Code 4

ENTER GROUP

EXIT

Enable

Disable (*)

Group 16-1: EAN-13/JAN-13

ENTER GROUP

EXIT

Enable (*)

Disable

ADD-ON 2/5

Disable (*)

Enable

Transmit Check Character

Disable

Enable (*)

Truncate 1st digit

Disable (*)

Enable

Truncate 2nd digit

Disable (*)

Enable

EAN Checkdigit

Disable

Enable (*)

Group 16-2: UPC-A

ENTER GROUP

EXIT

Enable (*)

Disable

ADD-ON 2/5

Disable (*)

Enable

Transmit Check Character

Disable

Enable (*)

Truncate Leading Digit

Disable (*)

Enable

UPC-A Convert to EAN-13

Disable (*)

Enable

Group 16-3: EAN-8/JAN-8

ENTER GROUP

EXIT

Enable (*)

Disable

ADD-ON 2/5

Disable (*)

Enable

Transmit Check Character

Disable

Enable (*)

Truncate Leading Digit

Disable (*)

Enable

EAN-8 Convert to EAN-13

Disable (*)

Enable 1
(add zeros in the front
of barcode)

Enable 2
(add zeros in the middle
of barcode)

Group 16-4: UPC-E

ENTER GROUP

EXIT

Enable (*)

Disable

ADD-ON 2/5

Disable (*)

Enable

Transmit Check Character

Disable

Enable (*)

Truncate Leading Digit

Disable (*)

Enable

UPC-E Convert to UPC-A

Disable (*)

Enable

Group 16-5: ISBN/ISSN

ENTER GROUP

EXIT

Enable

Disable (*)

Group 17: General Parameters

ENTER GROUP

EXIT

Upper Case

Lower Case (*)

Universal

ALT Mode

Buzzer Pitch
(Default : 21)

Buzzer Duration
(Default: AA)

Buzzer Pitch & Buzzer Duration Setting:
Scan Enter Group 17 Label -->
Scan Buzzer Pitch or Buzzer Duration Label -->
Scan Two Digit Labels in Table-Hex -->
Scan Confirm Label in Table-Hex -->
Scan Exit Label

Power Up Beeping

Disable

Enable (*)

Normal

Turbo (*)

Group 18: Code ID Setting

ENTER GROUP

EXIT

CODE 39/CODE 32

INTERLEAVED 2 OF 5

INDUSTRIAL 2 OF 5

MATRIX 2 OF 5

CHINA POSTAGE

CODE 128

CODE 93

CODE 11

MSI/PLESSEY

CODABAR/NW7

EAN-13

EAN-8

UPC-E

UPC-A

CODE 4

Note: Refer to ASCII Table, scan two hexadecimal labels in Table Hex to represent one character

Group 19: WAND Type Parameters

ENTER GROUP

EXIT

BAR=LOW

BAR=HIGH(*)

Scan Speed

Lowest

Low (*)

High

Highest

Data Format

Transmit in Normal Format (*)

Transmit in Code 39 Format

Transmit in Code 128 Format

Group 20-1: (Magnetic Parameters)

ENTER GROUP

EXIT

Enable (*)

Disable

Track Order

Track 1/2/3 (*)

Track 1/3/2

Track 2/1/3

Track 2/3/1

Track 3/2/1

Track 3/1/2

Note: Options marked by ( ) are only available upon request

Group 20-1: (Magnetic Parameters)

ENTER GROUP

EXIT

Track Selection

Track 1&2&3 any (*)

Track 1 only

Track 2 only

Track 3 only

Track 1 and 2

Track 2 and 3

Track 1 and 2 and 3

ISO (*)

(JIS-2)

Note: Options marked by ( ) are only available upon request

Group 20-2: (Magnetic Parameters)

ENTER GROUP

EXIT

Start Sentinel:
(SS)

Tk1 Default : %

Tk2 Default: ;

Tk3 Default: ;

End Sentinel:
(ES)

Tk1&2&3 Default: ?

DLE:

Tk1 Default : Null

Tk2 Default: Null

Tk3 Default: Null

STX:

Tk1&2&3 Default: Null

Magnetic Output Data Format:
STX - Tk1 Start Sentinel - Tk1 Data - End Sentinel - Tk1 - DLE
STX - Tk2 Start Sentinel - Tk2 Data - End Sentinel - Tk2 - DLE
STX - Tk3 Start Sentinel - Tk3 Data - End Sentinel - Tk3 - DLE

Note: Options marked by ( ) are only available upon request

Group 21: (Function Key Emulation)

ENTER GROUP

EXIT

Enable

Enable Function Key Emulation:
Scan Enter Group 21 Label -->
Scan Enable Label -->
Scan Exit Label

Disable (*)

1:
To concatenate a function key with input data, please refer to Function Key Table for its hexadecimal representation.
For Example:

Preamble data with F1
Scan Enter Group 6 Label -->
Scan Preamble Label -->
Scan Label 0 and 1 respectively in Table-Hex (Page 45) -->
Scan Confrim Label in Table-Hex (page 45) -->
Scan Exit Label

Function Key Table (Full ASCII Code 39 Table)			
F1:01	F2:02	F3:04	F4:04
F5:05	F6:06	F7:07	F8:08
F9:09	F10:0A	F11:0B	F12:0C
Enter:0D	Tab:0E	BS:0F	Up:10
Down:11	Left:12	Home:14	End:15
PgUp:16	PgDn:17	Ins:18	Del:19
Esc:1B	Right:13	S-Tab:1C	

2:
To scan a function key barcode label, Full ASCII must be enabled. Please refer to Full ASCII Code 39 Table to produce the function key barcode label.

Full ASCII Code 39 Enable

Function Code for PC XT/AT

F1 ($A)

F2 ($B)

F3 ($C)

F4 ($D)

F5 ($E)

F6 ($F)

F7 ($G)

F8 ($H)

F9 ($I)

F10 ($J)

F11 ($K)

F12 ($L)

Function Code for PC XT/AT

Enter ($M)

End ($U) ($B)

Tab ($N)

PgUp ($V)

BS ($O)

PgDn ($W)

Up ($P)

Ins ($X)

Down ($Q)

Del ($Y)

Left ($R)

Esc (%A)

Right ($S)

Home ($T)

Table-Hex : HEXADECIMAL

0

1

2

3

4

5

6

7

8

9

A

B

C

D

E

F

Confirm

ASCII TABLE

H/I	0	1	2	3	4	5	6	7
0	NULL	DLE	SP	0	@	P	`	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	'	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	.	<	L	\	l	|
D	CR	GS	-	=_	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	-	o	DEL

Hexadecimal-Decimal Conversion Table

H/I	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
B	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

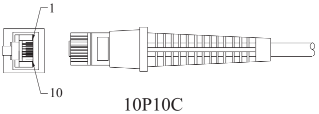
For Example:

Hexadecimal	Decimal
56 -> H:5 L:3	83
D5-> H:D L:5	213

PIN ASSIGNMENTS

10Pin Modular Plug

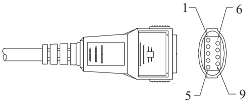
RJ-45 Male 10P10C	TTL	WAND	KB	RS-232	KB→USB
1	×	×	×	RTS	×
2	×	×	×	CTS	×
3	PWR-CTL	×	×	TX	×
4	GND	GND	GND	GND	GND
5	GOOD-READ	GOOD-READ	PC-DATA	×	PC-DATA
6	DATA	DATA	PC-CLK	×	PC-CLK
7	VCC	VCC	VCC	VCC	VCC
8	SW-DET	×	KB-CLK	×	×
9	S.O.S	×	KB-DATA	×	×
10	×	×	×	RX	×



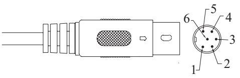
10P10C

TTL Signal Output

Function	DB9F	Din6M/5M(240°)
Start of Scan	1	6
Signal Data	2	2
Led Indicator	3	---
Trigger	5	5
Power Enable	6	4
GND	7	3
VCC+5V	9	1



DB9F

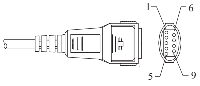


Din6M
Din5M (without pin#6)

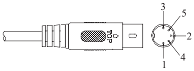
PIN ASSIGNMENTS

Wand Emulation Signal Output

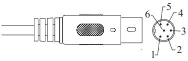
Function	DB9F	Din5M (180°)	Din6M/Din5M (240°)
Signal Data	2	1	2
GND	7	2	3
VCC+5V	9	3	1



DB9F



Din5M (180°)



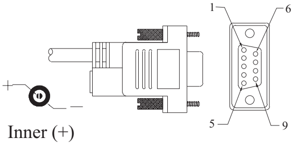
Din6M
Din5M (without pin#6)

Note : "F" stands for a female connector, while "M" stands for a male connector.

RS-232 Signal Output

Function	DB9F+DC (or without DC)
GND	5
CTS	7
RTS	8
RX	3
TX	2
VCC+5V	9

Note : For PC applications, a cable with DC power jack is required to accept external power input.

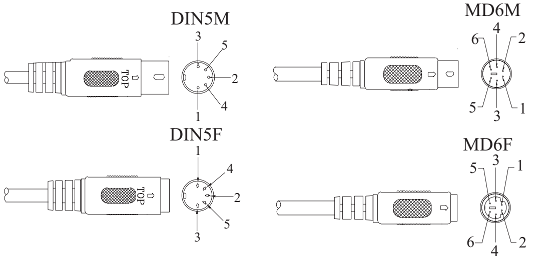


Inner (+)

DB9F+DC -Jack

Keyboard Signal Output

Funcion	Din5F	Din5M	Mini-Din6M	Mini-Din6F
GND	4	4	5	5
PC_Data	---	2	---	4
PC_CLK	---	1	---	6
Vcc+5V	5	5	2	2
KB_CLK	1	---	6	---
KB_Data	2	---	4	---



USB Signal Output

FUNCTION	USB-A
GND	4
Vcc	1
D+	3
D-	2

